Avenview

VGA & RS232 Extender SET over Single CAT5 with RGB Delay Control

Model #: VGA-C5RS-SET

WUXGA
1920x1200

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Section 1: Getting Started

1.1   Important Safeguards

Please read all of these instructions carefully before you use the device. Save this manual for future reference.

What the warranty does not cover

- Any product, on which the serial number has been defaced, modified or removed.
- Damage, deterioration or malfunction resulting from:
    - Accident, misuse, neglect, fire, water, lightning, or other acts of nature, unauthorized product modification, or failure to follow instructions supplied with the product.
    - Repair or attempted repair by anyone not authorized by us.
    - Any damage of the product due to shipment.
    - Removal or installation of the product.
    - Causes external to the product, such as electric power fluctuation or failure.
    - Use of supplies or parts not meeting our specifications.
    - Normal wear and tear.
    - Any other causes which does not relate to a product defect.
- Removal, installation, and set-up service charges.

1.2   Safety Instructions

The Avenview VGA-C5RS-SET, VGA & RS232 Extender over Single CAT5 has been tested for conformance to safety regulations and requirements, and has been certified for international use. However, like all electronic equipment's, the VGA-C5RS-SET should be used with care. Read the following safety instructions to protect yourself from possible injury and to minimize the risk of damage to the unit.

- Do not dismantle the housing or modify the module.
- Dismantling the housing or modifying the module may result in electrical shock or burn.
- Refer all servicing to qualified service personnel.
- Do not attempt to service this product yourself as opening or removing housing may expose you to dangerous voltage or other hazards
- Keep the module away from liquids.
- Spillage into the housing may result in fire, electrical shock, or equipment damage. If an object or liquid falls or spills on to the housing, unplug the module immediately.
- Have the module checked by a qualified service engineer before using it again.
- Do not use liquid or aerosol cleaners to clean this unit. Always unplug the power to the device before cleaning.

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1.3   Regulatory Notices Federal Communications Commission (FCC)

This equipment has been tested and found to comply with Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.
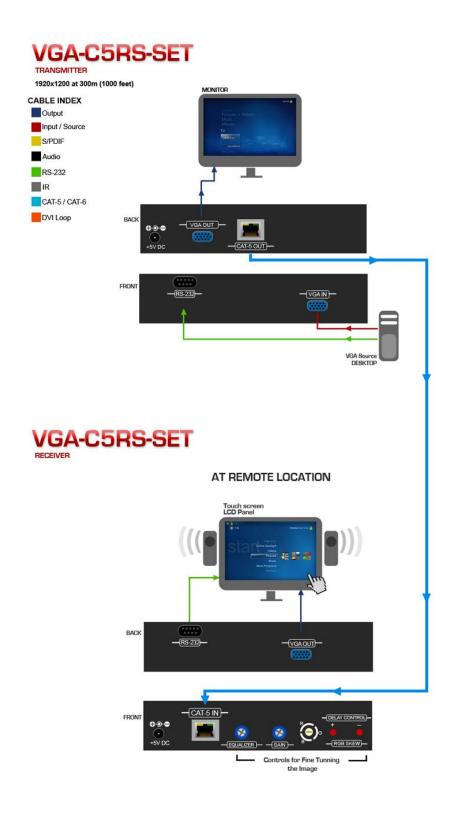Any changes or modifications made to this equipment may void the user's authority to operate this equipment.

1.4   Introduction

With only one cost effective CAT-5e cable, the Avenview VGA-C5RS-SET lets you extend VGA (WUXGA) to cover the distance up to 300m (1,000ft). The system consists of Transmitter (VGA-C5RS-S) and Receiver (VGA-C5RS-R). With built-in EQ and GAIN control, the transmission path can be adjusted to adapt the cable quality and video bandwidth. Furthermore, the VGA RGB delay control [de-skew] function provides the compensation among R, G, B signals due to long transmission or through normal LAN cable. In order to extend the control patch, VGA-C5RS-SET also has RS232 half-duplex long range extender.

-    Supports up to WUXGA [1920x1200@60] or UXGA [1600x1200@60] to 330m (1,000ft)
-    Supports RS-232 half-duplex
-    Adjustable equalization and gain control on RX unit
-    De-skew compensation available for RGB delay control

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VGA-C5RS-SET

TRANSMITTER

1920x1200 at 300m (1000 feet)

CABLE INDEX
- Output
- Input / Source
- S/PDIF
- Audio
- RS-232
- IR
- CAT-5 / CAT-6
- DVI Loop

MONITOR

BACK
+5V DC | VGA OUT | CAT-5 OUT

FRONT
RS-232 | VGA IN

VGA Source
DESKTOP

VGA-C5RS-SET

RECEIVER

AT REMOTE LOCATION

Touch screen
LCD Panel

BACK
RS-232 | VGA OUT

FRONT
+5V DC | CAT-5 IN | EQUALIZER | GAIN | R G B | DELAY CONTROL + − | RGB SKEW

Controls for Fine Tunning
the Image

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1.5   Package Contents

Before you start the installation of the converter, please check the package contents.

- -   VGA-C5RS-S   x 1
- -   VGA-C5RS-R   x 1
- -   Power Adapter (+5VDC, 2A)   x 2
- -   User's Manual   x 1

1.6   Before Installation

- Put the product in an even and stable location. If the product falls down or drops, it may cause an injury or malfunction.
- Don't place the product in too high temperature (over 50°C), too low temperature (under 0°C) or high humidity.
- Use the DC power adapter with correct specifications. If inappropriate power supply is used then it may cause a fire.
- Do not twist or pull by force ends of the optical cable. It can cause malfunction.
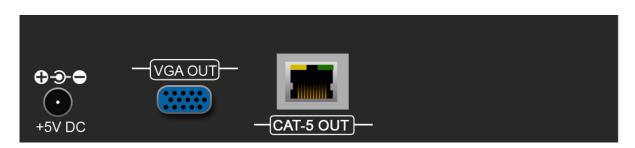
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1.7   Panel Description

FRONT PANEL (Transmitter, VGA-C5RS-S)

1. **RS-232:** Connect a RS-232 Serial Command Device	2. **VGA IN:** VGA Input from Video Source

REAR PANEL (Transmitter, VGA-C5RS-S)

1. **5V DC** Power Jack	2. **VGA OUT:** Local VGA OUT
3. **CAT-5 OUT:** CAT5/CAT6 cable for extending the signal	

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FRONT PANEL (Receiver, VGA-C5RS-R)

1. RS-232: Connect to a RS-232 Serial Command Device	VGA OUT: Connect to a remote VGA display

REAR PANEL (Receiver, VGA-C5RS-R)

1. **5V 2A DC** Power Connector	2. **RJ45 IN**
3. **EQ:** Rotary Control for equalization of R, G, B respectively	4. **GAIN:** Rotary control for Gain Control of R, G, B respectively
5. **Rotary Control:** R=0~2, G=3~5, B=6~7 for de-skew compensation on respective color channel	6. Push button to decrease level of de-skew compensation
7. Push button to increase level of de-skew compensation	

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1.8   Installation

To setup Avenview VGA-C5RS-SET follow these steps for connecting to a device:

1. Connect VGA source to VGA-C5RS-S
2. Connect VGA display to VGA-C5RS-R
3. Connect CAT5/CAT6 cable between Transmitter (VGA-C5RS-S) and Receiver (VGA-C5RS-R)
4. Ensure that cables are tightly connected
5. Plug in 5V DC power cord to the power jack of the Receiver VGA-C5RS-R.
6. Plug in 5V DC power cord to the power jack of the Transmitter VGA-C5RS-S.

1. *If a blurred video is seen or even worse, not displayed at all, try to adjust the EQ and Gain rotary controls to improve the cable skew. GAIN rotary controls are designed for gain control, and EQ rotary controls are designed for equalizing the wave form of the receiving video signal. It is suggested to begin with adjusting the rotary control of EQ to get the input video displayed first, and then the GAIN according to the video you see on the screen.*
2. *RGB delay control [De-skew] offers the flexible functionality to allow skew compensation among VGA R, G, B signals due to long transmission or thru low quality cable. By adjusting the rotary switch to choose R, G or B color channel at first, then use the push buttons to increase or decrease the delay in the corresponding color channel. There are totally 31 steps, each step with 2ns difference, for adjusting the delay between each color individually. Then the graphics quality can be further assured.*

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Section 2: Specifications

Item	Description	
Units	VGA-C5RS-S	VGA-C5RS-R
Unit Description	VGA Transmitter with Audio	VGA Receiver with RGB Delay Control
Video Bandwidth	350MHz	
Video Support	VESA	
Supported Resolutions	Up to WUXGA (1920 x1200)	
Resolution and Distance	WUXGA 1920x 1200 at 300 meters (1000 feet)	
Audio Support	No	
Equalization	Continuous Analog Control	
Input Video Signal	1.2 Volts (peak-to-peak)	
RGB Delay Control	-	Yes
ESD Protection	- Human body model — ±15kV (air-gap discharge) & ±8kV (contact discharge) - Core chipset — ±8kV	
Input	1 x VGA 1 x RS232	1 x RJ45
Output	1 x RJ45 1 x VGA	1 x VGA 1 x RS232
VGA Connector	HD-15 (15 pin D-sub Female)	
RJ45 Connector	WE/SS 8P8C with 2 LED indicators	
Dimensions (L x W x H)	4.8" x 3.7" x 1"	
Power Supply	5V 2A DC	
Power Consumption	5 Watt (max)	

Environmental

Operating Temperature	32˚ ~ 104˚F (0˚ to 40˚C)	
Storage Tempearture	-4˚ ~ 140˚F (-20˚ ~ 60˚C)	
Relative Humidity	20~90% RH (no condensation)	

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Notice

1. All transmission distances are measured using Belden 1583A CAT-5e 125MHz LAN cable and STRODESIGN Video Signal Generator VG-859C. The transmission distance is defined as the distance between the video source and the VGA display.

2. The transmission length is largely affected by the type of LAN cables, the type of video sources, and the type of display. The testing result shows solid LAN cables (usually in bulk cable 300m or 1000ft form) can transmit a lot longer signals than stranded LAN cables (usually in patch cord form). Shielded STP cables are better suit than unshielded UTP cables. A solid UTP CAT5e cable shows longer transmission length than stranded STP CAT6 cable. For long extension users, solid cables are your only choice.

3. To reduce the interference among the unshielded twisted pairs of wires in LAN cable, you can use shielded LAN cables to improve EMI problems, which is worsen in long transmission.

4. Because the quality of the LAN cables has the major effects in how long transmission distance will be made and how good is the received display, the actual transmission length is subject to your LAN cables. For resolution greater than 1080i or 1280x1024, a CAT-6 cable is recommended..

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